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GOLD GLOVE PRODUCTIONS, LLC
and RYAN A. BROOKS

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

GOLD GLOVE PRODUCTIONS, LLC, a California Limited Liability Company and RYAN A. BROOKS, an individual,

Plaintiffs,

vs.

DON HANDFIELD, an individual, TRESSA DIFIGLIA HANDFIELD, an individual, RANDY BROWN, an individual, MICHELE WEISLER, an individual, CHARLES FERRARO, an individual, JAY COHEN, an individual, ROBERT LORENZ, an individual, UNITED TALENT AGENCY, INC., a California Corporation, THE GERSH AGENCY, INC., a California Corporation, WARNER BROS. PICTURES INC., a Delaware Corporation, MALPASO PRODUCTIONS, LTD., a California Corporation, WARNER BROS. DISTRIBUTING INC., a Delaware Corporation, WARNER BROS. HOME ENTERTAINMENT INC., a

Case No.: CV13-07247-DSF (RZx)

DECLARATION OF LARRY F. STEWART IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION FOR SUMMARY JUDGMENT.

Delaware Corporation, WARNER BROS. DOMESTIC TELEVISION DISTRIBUTION, INC., a Delaware Corporation, TW UK HOLDINGS, INC., a Delaware Corporation, and DOES 1 through 10, inclusive,

Defendants.

DECLARATION OF LARRY F. STEWART

I, LARRY F. STEWART, declare and state:

1. I am over eighteen years old and am not a party to the above-entitled action. I have personal knowledge of each and every fact stated in this declaration, except as to those facts to which I am informed and believe, where I have indicated as such. If called to testify, I could testify competently thereto, and will. By way of this declaration, I offer factual findings to the Court and my expert opinions, independently and unreservedly.

2. I am a retained expert for Gold Glove Productions, LLC in the above captioned case. I am presently Chief Forensic Scientist and President of Stewart Forensic Consultants, LLC, San Luis Obispo, California. During my 34 years as a forensic scientist, I have been requested to conduct forensic examinations in many well-known cases to include; the Unabomber, the John Wilkes Booth diary, numerous accused Nazi war criminals, e.g. John Demjanjuk, a.k.a. Ivan the Terrible, the reinvestigation of the Dr. Martin Luther King murder, the reinvestigation of the Kennedy assassination/CIA conspiracy theory, the Quedlinburg Treasure, the 1933 Saint-Gaudens Double Eagle gold coin, the Jon Benet Ramsey murder investigation, the 9/11 terrorist attacks, the DC Sniper investigation and the 2010 Brazilian presidential election scandal.

3. My education includes an Associate of Arts Degree from Florida Technological University, Orlando, Florida in 1976, a Bachelor of Science in

Forensic Science Degree from the University of Central Florida, Orlando, Florida in 1979, and a Master of Forensic Sciences Degree from Antioch University, Yellow Springs, Ohio, received in June of 1983.

4. I have received numerous specialised training courses in the forensic sciences from 1976 through the present from such facilities as Crane-Weston Paper Mill, Bureau of Engraving and Printing, McCrone Research Institute, Virginia Polytechnic Institute and State University, Central Intelligence Agency, U.S. Air Force, U.S. Justice Department, Federal Bureau of Investigations, FBI Training Academy (Quantico), U.S. Secret Service, Perkin-Elmer Corporation, and others.

5. My work experience includes Forensic Chemist for the United States Bureau of Alcohol, Tobacco and Firearms; Counterfeit Specialist, Questioned Document Examiner, Senior Document Examiner and National Expert on Matters Concerning Ink for the United States Secret Service; Chief, Questioned Document Branch and Laboratory Director/Chief Forensic Scientist for the United States Secret Service. Subsequent to federal government retirement (after a credited 27 year tenure), I began my own independent forensic laboratory and consulting service known as Stewart Forensic Consultants, LLC.

6. I have also been an instructor or guest speaker in forensic science for numerous groups and agencies, to include; Bureau of Alcohol, Tobacco and Firearms, U.S. Secret Service, Antioch School of Law, George Washington University, Federal Law Enforcement Training Center, Rochester Institute of Technology, UCLA, Catholic University, U.S. Department of State, International Law Enforcement Academy, Naval Criminal Investigative Service, U.S. Air Force, Cuesta College and California Polytechnic Institute.

7. I have testified as an expert forensic scientist witness in state, federal and military courts of law, as well as testified or been deposed in foreign court systems to include: Austria, Australia, Canada, Germany, Sri Lanka and Thailand. I have testified in an International Tribunal held in Vienna, Austria. I have also

testified as a forensic scientist at The Hague in the Netherlands and as a forensic expert three times before the U.S. Congress.

8. I served the U.S. Government as a forensic scientist for over 26 years and have been in private practice for over 8 years.

9. I have achieved many awards and honors in the field of forensic science. They include: Participated as a "referee" in the 1980 Crime Laboratory Proficiency Training Program Forensic Sciences Foundation, Colorado Springs, Colorado; Testified in May of 1989 and 1990 before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, U.S. House of Representatives (these matters concerned the investigation of fraud in science); Certified by the U.S. Secret Service as an accredited Examiner of Questioned Documents, February 1, 1991; Recipient of the Health and Human Services Inspector General's Integrity Award, 1991; Appointed Chairman of A.S.T.M. task groups (1991) concerned with developing standards for performing "Writing Ink Comparisons" and "Writing Ink Identifications;" United States Delegate at the 14th European Meeting on Currency Counterfeiting, The Hague, The Netherlands, October 9-11, 1991 and the First International Conference on Fraudulent Documents, Ottawa, Canada, April 27- May 1, 1992; United States Delegate at the 6th European Conference for Police and Government Experts, London, United Kingdom, October 2-4, 1996 (presented a paper on Ink Dating, Relative and Absolute: New Approaches to Old Problems); Testified on July 22, 1999 before the House Judiciary Committee, Subcommittee on Immigration and Claims, U.S. House of Representatives (this matter concerned detection and prevention of counterfeit documents); Classified as an “Inspector” for the American Society of Crime Laboratory Directors; Elected to the Board of Directors for the American Society of Crime Laboratory Directors, September 14, 2000; Elected to the Board of Directors for the Document Security Alliance, December, 2003; Appointed as the forensic consultant for the United Nations, tasked with developing and implementing a successful forensic laboratory in

Nigeria, Africa, 2007; Elected to the Board of Directors for The Academy, June, 2007; Certified Forensic Consultant, American College of Forensic Examiners Institute, October, 2007; Appointed as a forensic consultant for the U.S. Department of State, Bureau of International Narcotics and Law Enforcement Affairs in Yerevan, Armenia, January, 2008 (ongoing assignment); Appointed as a forensic consultant for the U.S. Department of State, Bureau of International Narcotics and Law Enforcement Affairs in Tbilisi, Georgia, May, 2008; Elected to the Board of Directors for the American Board of Forensic Examiners, February, 2009; Accepted as a member of the Association for Intelligence Officers, 2011 and the Business Espionage Controls and Countermeasures Association, 2011.

10. I have over thirty original publications or presentations of original forensic works, as well as two published books in the field of forensic science, to include:

- "Detection of Volatile Accelerants in Fire Debris. 1. A Comparative Evaluation... " R. Strobel, R. Tontarski, L.F. Stewart, P. Wineman presented at the American Academy of Forensic Sciences, New Orleans, Louisiana, February 1980, and the Mid-Atlantic Association of Forensic Scientists, combined meeting, Louisville, Kentucky, May 1980;
- "Artificial Aging of Documents," L.F. Stewart. Published in the Journal of Forensic Sciences, Vol. 27, No. 2, April 1982;
- "Ballpoint Ink Age Determination by Volatile Component Comparison," L.F. Stewart, Presented at the American Academy of Forensic Sciences meeting, Orlando, Florida, February 1982, and Mid-Atlantic Association of Forensic Scientists/Northeastern Association of Forensic Scientists joint meeting, Harrisburg, Pennsylvania, April 1982. Published in the Journal of Forensic Sciences, April 1985;
- "The Role of the Secret Service in Counterfeit Deterrence," L.F.

Stewart. Presented at the Mid-Atlantic Association of Forensic Scientists meeting, Baltimore, Maryland, April 1983;

- "The Forensic Analysis of Printing Inks," L.F. Stewart. Presented at the American Society of Questioned Document Examiners, Lake Tahoe, Nevada, September 1983;
- "Counterfeit Credit Card Deterrence," L.F. Stewart. Presented at the American Society of Questioned Document Examiners/Canadian Society of Forensic Scientists annual meeting, Montreal, Quebec, Canada, September 1985;
- "Detection of Counterfeit Currency," L.F. Stewart. Presented at the International Association of Identification conference, Arlington, Virginia, August 1987;
- "Identification of United States Currency Security Fibers by Fourier Transform Infrared Spectroscopy," J.E. Brown and L.F. Stewart. Presented at the Canadian Society of Forensic Scientists annual meeting, Toronto, Ontario, Canada, October, 1988;
- "U.S. Secret Service Ink Identification System," J.W. Hargett, J.E. Brown and L.F. Stewart. Presented at the Canadian Society of Forensic Scientists annual meeting, Toronto, Ontario, Canada, October 1988;
- "Use of Enlargement Ratios of Negatives and/or Printing Plates to Characterize Counterfeit Currency," L.F. Stewart, R.L. Outland and J.E. Brown. Presented at the Canadian Society of Forensic Scientists annual meeting, Toronto, Ontario, Canada, October 1988;
- "Current Status of Ink Age Determination," L.F. Stewart and S.L Guertin. Presented at the Ninth INTERPOL Forensic Science Symposium, INTERPOL Headquarters, Lyon, France, December 12, 1989. Published in INTERPOL International Criminal Police Review, March-April, 1991;

- "A.S.T.M. Standard for Writing Ink Comparisons," L.F. Stewart and J.L. Becker. Presented at the Mid-Atlantic Association of Forensic Scientists 1991 meeting, Bethesda, Maryland, May 31, 1991;
- "Standard Guide For Test Methods For Forensic Writing Ink Comparisons," L.F. Stewart (Task Group Chairman). Published in the American Society For Testing and Materials (ASTM), Standard Designation number E-1422-91, November 1991;
- "Counterfeit Documents Produced by Color Copier Systems," L.F. Stewart, Presented at INTERPOL Headquarters, Lyon, France, December 11-19, 1991;
- "Sentence Insertions Detected Through Ink, ESDA and Line Width Analysis," S.L. Fortunato and L.F. Stewart. Published in the Journal of Forensic Sciences, November 1992;
- "Status of U.S.S.S. Ink Dating Program," J.W. Hargett and L.F. Stewart. Presented at the Humboldt University, Berlin, Germany, April 2, 1993. Published in Kriminalistik und Forensische Wissenschaften, No. 82, 1994;
- "U.S.S.S. International Ink Library and Bulletin Board System," L.F. Stewart. Presented at the Mid-Atlantic Association of Forensic Scientists meeting, Baltimore, Maryland, May 20, 1993;
- "Standard Guide For Test Methods For Forensic Writing Ink Identifications," L.F. Stewart (Task Group Chairman). Published in the American Society For Testing and Materials (ASTM), Standard Designation number E-1422-95, 1995;
- "The Government Response to Ink Age Determination," L.F. Stewart, J.L. Becker. Presented at the American Academy of Forensic Sciences meeting, Seattle, Washington, February 17, 1995. Published in the International Criminal Police Review - INTERPOL, Spring, 1996;

- "Distinguishing Between Relative Ink Age Determination and the Accelerated Aging Technique," L.F. Stewart and S.L. Fortunato. Published in the International Journal of Forensic Document Examiners, January/March, 1996;
- "Forensic Examination of Financial Crimes Documents," L.F. Stewart and J.W. Hargett. Presented at the 6th European Conference for Police and Government Document Experts, London, United Kingdom, October 2-4, 1996 and the GFS Conference, Luzerne, Switzerland, September 9-12, 1997;
- "Unusual Document Examination Approaches and Their Relationship to the Daubert Challenge," L.F. Stewart. Presented at the American Board of Forensic Document Examiners meeting, Las Vegas, NV, June 23, 2002 and the American Society of Questioned Document Examiners meeting, San Diego, CA, August 14, 2002;
- "Forensic Science – Fake Fingerprints?," L.F. Stewart, Published in the Forensic Expert Witness Association, Fall, 2007;
- "Leveling The Playing Field," L.F. Stewart. Presented at the California Association of Licensed Investigators, Central Coast meeting, Pismo Beach, California, December 4, 2008;
- "Crime Scene Investigation," L.F. Stewart, on-line course developed for and published by the American College of Forensic Examiners Institute, January 2009;
- "Identity Theft," L.F. Stewart, A-Z Literary Book Publisher, 2009;
- "Document Examination," L.F. Stewart, A-Z Literary Book Publisher, 2009;
- "Forensic Science – Fake Fingerprints?," L.F. Stewart, Published in the HG Experts Legal Experts Directory on-line publication, Spring, 2010;
- "Forensic Science - The Good and the Bad," L.F. Stewart, Published in

the HG Experts Legal Experts Directory on-line publication, Spring, 2010;

- "Forensic Science - Erroneous Handwriting Opinions," L.F. Stewart, Published in the HG Experts Legal Experts Directory on-line publication, Spring, 2010;
- "Forensic Handwriting Examination - Selecting Your Expert," L.F. Stewart, Published in the HG Experts Legal Experts Directory on-line publication, Winter, 2011;

11. I have numerous professional affiliations, to include:

- American Academy of Forensic Sciences - Fellow;
- Canadian Society of Forensic Scientists (past member);
- American Society of Crime Laboratory Directors;
- Document Security Alliance (past member);
- Mid-Atlantic Association of Forensic Scientists (past member);
- California Association of Licensed Investigators;
- Forensic Expert Witness Association;
- American College of Forensic Examiners Institute;
- American Chemical Society;
- Association For Intelligence Officers;
- Business Espionage Controls & Countermeasures Association

12. I have held or currently hold the following professional affiliation offices:

- Mid Atlantic Association of Forensic Scientists (Secretary/Treasurer), November 1981 to October 1984;
- American Society of Crime Laboratory Directors (Board of Directors), September 14, 2000 to September 2003;
- Document Security Alliance (Board of Directors), December 2003 to

November 2004;

- American Board of Forensic Examiners (Board of Directors), February 2009 to December 2009;
- The Academy (Board of Directors), June 2007 to present;
- The American College of Forensic Examiners Institute (Education Committee), 2012-2013;

13. My current curriculum vitae and a partial listing of previous testimonies are attached. (See Exhibit 1)

14. My role in this matter was to determine if various items related to the development of a movie script are accurate with respect to date and creation. I conducted my own, independent, forensic document examinations on the questioned documents at issue in this matter.

15. This will serve as a forensic laboratory report in this matter outlining my observations and findings regarding evidence presented to date for my evaluation.

Exhibits Examined:

16. Q1 - One, four-page fax document, bearing some original handwriting. This document is titled, "TROUBLE WITH THE CURVE Discussion Points" and is dated, "11/14/97."

17. Q2 - One spiral bound notebook bearing a brownish gray cover. On the cover is the original handwritten entry, "Trouble with the Curve."

18. Q3 - One spiral bound notebook bearing a green cover. On the cover is the original handwritten entry, "Trouble w/ Curve."

19. Q4 - One bound notebook. The right side front edge bears the printing, "INNOVATIVE ARTISTS" Inside the notebook, the first page bears the printed entry, "Trouble with the Curve by Randy Brown" and "Bubble Factory Draft 3/98."

20. Note: The four Exhibits as a group were presented as having been created during the 1997-1998 time frame.

Synopsis of Results:

21. It is probable that ink found within the Exhibit Q2 and Q3 spiral notebooks was not placed in those books during 1997-1998, but instead within the last two years.

22. The commercial availability of the spiral notebooks themselves indicates the blank notebooks weren't even available during 1997-1998.

23. It is probable that the toner used to create the Q4 book with toner from an office machine system that did not exist in March 1998 (creation date as indicated on the document), but instead was not first commercially available until September 2001.

24. There are 32 pages that were torn and removed from the Exhibit Q2 spiral notebook.

25. There were 28 pages that were torn and removed from the Exhibit Q3 spiral notebook.

26. These results in combination yield a highly probable conclusion that the Exhibit Q1 through Q4 document collection was not produced in 1997-1998, but instead much more recently.

Procedure for Examination:

27. Each of the above described Exhibits were first examined by the undersigned on January 3, 2014 at the offices of O'Melveny & Myers, 1800 Avenue of the Stars, Los Angeles, California 90067. Present during the examination was opposing counsel's forensic expert, Erich Speckin.

28. My initial examination began with a "physical" examination of the four documents. Physical examinations of a questioned document are performed in order

to obtain information about the document concerning things like production method, types of materials used, size and any other general physical characteristics.

29. Physical examinations include non-destructive methods for inspecting the documents visually with an appropriate light source, taking measurements (where indicated), and viewing the documents with a magnifying device. For examinations outside the laboratory, I typically utilize a digital microscope and/or a scanner allowing me to discern information about the physical characteristics and production of the documents.

30. This portion of the examination is necessary to determine how questioned documents were produced and whether any written entries are original (i.e., created with a writing instrument) or instead reproductions (e.g., photocopied or scanned and then printed).

31. In addition, typically at this stage of the analysis, it can be ascertained if there are any other extraordinary observations such as ink or printing alterations, deletions, or obliterations, or else things like watermarks in the paper that may possibly identify the manufacturing date.

32. The information found on documents, e.g. writing, text and images can be printed using various methods. These methods of production are referred to as printing processes and are identifiable using a magnifying device with an appropriate light source.

33. The most common types of home and office machines utilize toner (e.g., photocopiers, laser printers, and some facsimile machines) or inkjet technology (e.g., inkjet printers and some types of multifunction machines capable of scanning,

copying, faxing, and printing).

34. Typically, inkjet ink absorbs into the paper and appears planar, or flat, when visualized with a microscope. Toner either consists of a liquid or else particulate material that is deposited, typically on paper. Toner that is composed of particulate material (the most common) deposits on the surface of the paper, while liquid toner absorbs into the paper.

35. Both of these technologies are capable of printing in black and/or color. In some instances, the printed material on a document may appear black to the naked eye, but is actually composed of a mixture of colors, when viewed under magnification.

36. Writing inks can be classified into ballpoint or non-ballpoint (e.g., rollerball, felt tip, gel, and fountain) pen inks based on their unique microscopic characteristics that result from the combination of their differing chemical compositions, construction and interactions with paper.

37. Determining the type and color of a writing ink is commonly documented following a review of the results from a physical examination and the standard methodology for detection is further described in American Society for Testing and Materials (ASTM) International E1422-05: Standard Guide for Test Methods for Forensic Writing Ink Comparison. (See Exhibit 2)

38. Similarly, additional examination procedures followed closely the published standards in the field of forensic questioned document examination, to include those outlined in:

- American Society for Testing and Materials (ASTM) International E2390-06: Standard Guide for Examination of Documents Produced with Toner Technology (See Exhibit 4),

- American Society for Testing and Materials (ASTM) International E1658-04: Standard Terminology for Expressing Conclusions of Forensic Document Examiners (See Exhibit 5) and

- American Society for Testing and Materials (ASTM) International E444-06: Standard Descriptions of Scope of Work Relating to Forensic Document Examiners (See Exhibit 6).

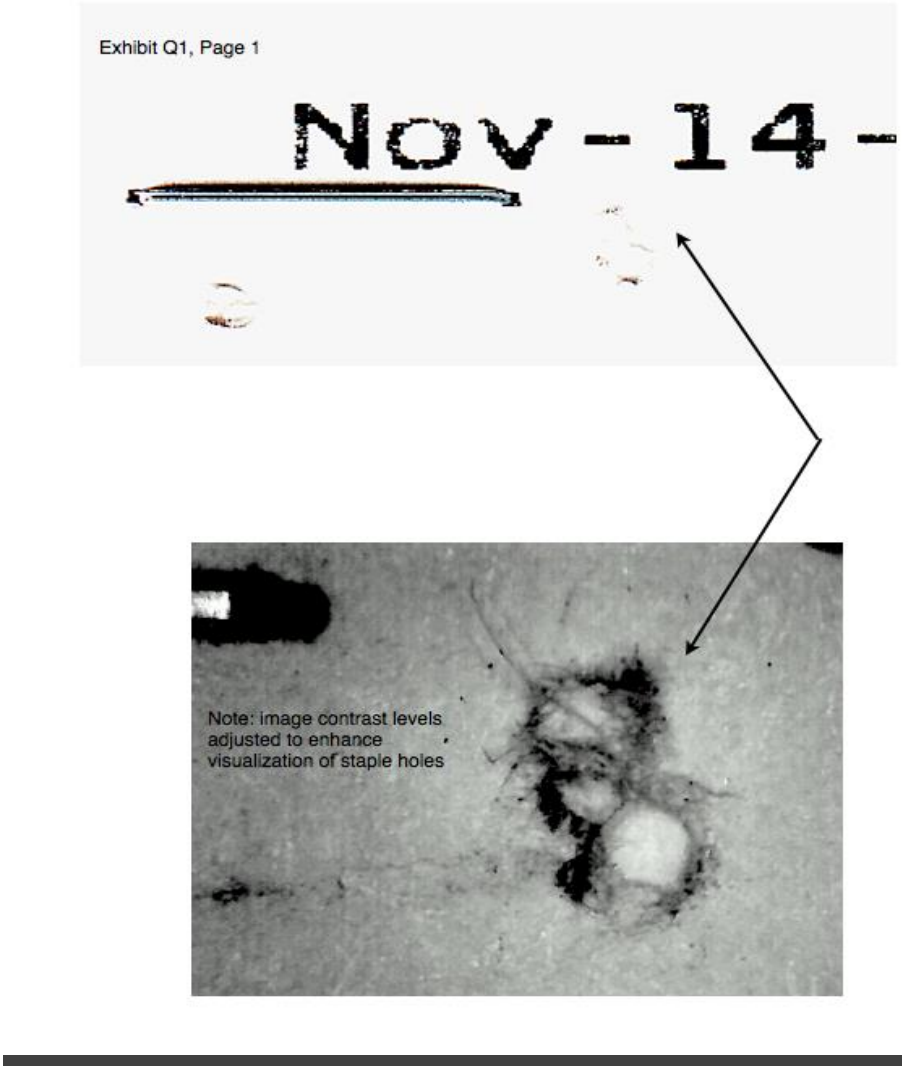
Other relied upon or referenced treatises are included as Exhibit 7.

39. During the initial examination of the documents, I was instructed that further studies that required the use of my laboratory would be allowed at a later (at that time, undecided) time.

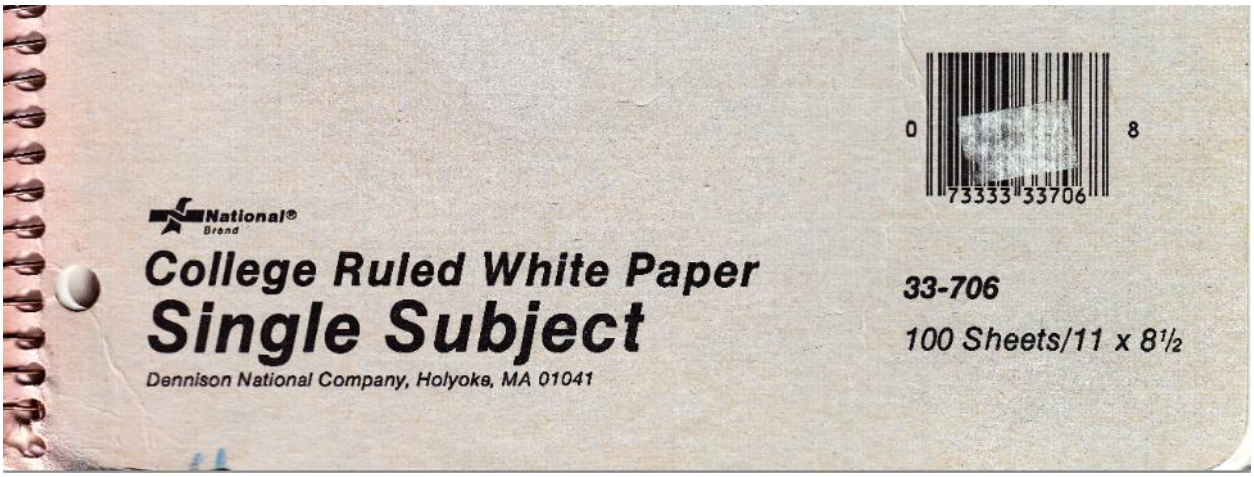
Initial Observations:

40. Exhibit Q1 is a faxed document bearing original handwritten entries in yellow and red inks. It consists of four pages, with the faxed page numbers shown as pages two through five.

41. As information, the document contains a fold across the approximate center in a horizontal direction, found on all pages. The pages contain crimping along some of the page's corners. The document shows indications of being stapled, and the staple removed multiple times (See the following enlargement):



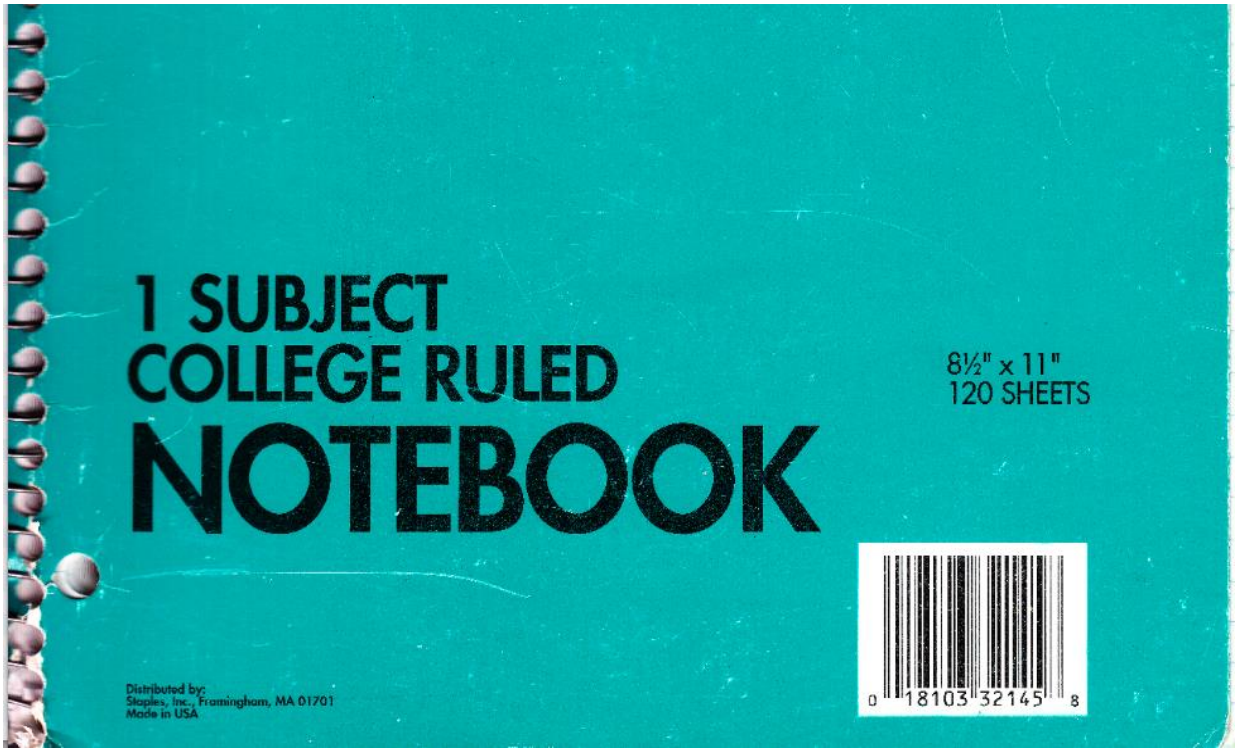
42. Exhibit Q2 is a spiral bound notebook with a brown/gray cover. The notebook contains many different handwritten entries utilizing many different inks. Following is an image of the lower portion of the front cover of Exhibit Q2, displaying the printed manufacturer information:



43. The printed manufacturer information on Exhibit Q2 indicates the following:

- "National Brand College Ruled White Paper Single Subject Dennison National Company, Holyoke, MA 01041." The item number is listed as "33-706." Also indicated is "100 Sheets/11 X 8 1/2." The UPC code is "073333337068."

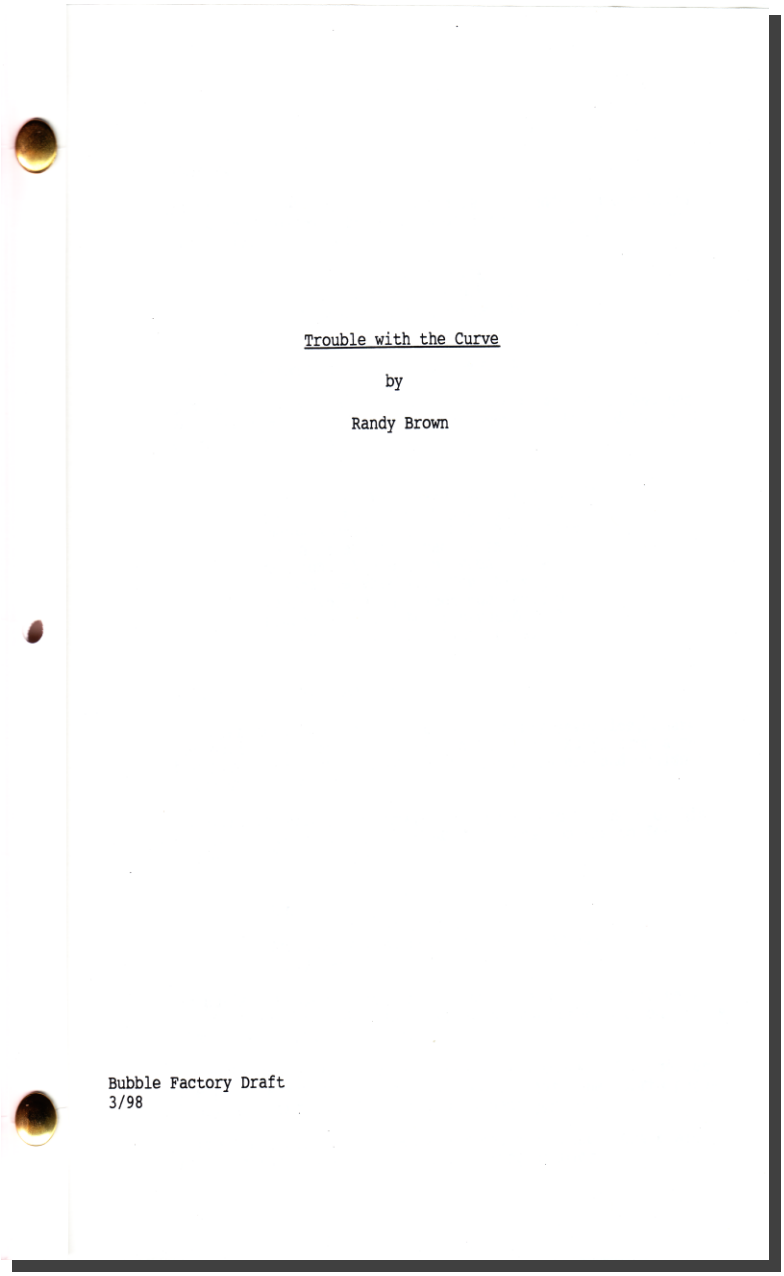
44. Exhibit Q3 is a spiral bound notebook with a green cover. The notebook contains many different handwritten entries utilizing many different inks. Following is an image of the lower portion of the front cover of Exhibit Q3, displaying the printed manufacturer information:



45. The printed manufacturer information on Exhibit Q3 indicates the following:

- "1 SUBJECT COLLEGE RULED NOTEBOOK Distributed by: Staples, Inc., Framingham, MA 01701 Made in USA." Also indicated is "8 1/2" X 11" 120 SHEETS." The UPC code is "018103321458.

46. Exhibit Q4 is one bound notebook containing two pins on the left vertical side to secure the binding. Following is an image of the first page of Exhibit Q4:



Trouble with the Curve

by

Randy Brown

Bubble Factory Draft
3/98

47. Photographs, scans, and digital microscope images were obtained from the Exhibits. Non-remarkable fluorescent characteristics of the pages and various inks were noted utilizing long wavelength ultraviolet illumination.

48. One of the tests I conducted was a physical examination of the folds in the pages and the staple holes found on Exhibit Q1. After those examinations, I found no basis to suggest that there had been a page substitution, however the

document has had a staple removed and then been re-stapled at least three times.

UPC (Barcodes):

49. UPC is an acronym for Universal Product Code. They were invented in 1973 and are widely used today in many countries as a means for tracking product sales. They are designed to be read by a digital scanner and are sometimes referred to as barcodes.

50. Both of the UPC codes found on Exhibits Q2 and Q3 are 12 digit, Type "A" codes. Information obtained indicates all barcodes of this type originate from the Uniform Code Council (GS1US.org). These codes are purchased by retailers and then assigned to a particular product and item.

51. Since UPC codes were found on both Exhibits Q2 and Q3, this examiner undertook efforts in order to determine the sales history, i.e. commercial availability, of the two spiral notebooks.

52. **Exhibit Q2** - I contacted National Brand Customer Service, 555 Airline Drive, Coppell, Texas 75019 (tel. 972-393-8080). I was informed that National bought the product line from Avery Dennison. I was informed that Rediform (rediform.com) would be the only source for tracking down the commercial history of the product. Upon contact, I was notified by Supervisor Lisa Catt that she "doesn't think they can" determine the commercial history of the product. I was also informed that they had been previously contacted about the same item two weeks earlier.

53. I continued my search utilizing alternate methods. A web search of the code through www.upcdatabase.com indicates:

54. Based upon the last modification date, I attempted to determine if that date (June 19, 2001) corresponded with the creation date (i.e. the date the UPC code was assigned to the Exhibit Q2 spiral notebook). If so, this would not agree with the purported date of the notebook, i.e. 1997-1998. Also, of note, is that this particular spiral notebook, containing the same UPC code is still commercially available through Office Depot, Amazon and Staples.

55. The President of Nationwide Barcode (www.nationwidebarcode.com) is Phil Peretz (tel. 775-376-8075). He has written background articles and information found on the web regarding researching the origins of barcodes. I contacted him by telephone and email.

56. Mr. Peretz indicated that the upcdatabase site (para 53 above) is of only marginal use when researching a UPC barcode history because that site was created as a college student project and information obtained through the site could be "unreliable."

57. He suggested a better search method would begin with the site www.google.com/merchantsGS1. He indicated that database was "good for locating company codes," meaning the owner of a particular UPC barcode.

58. Upon checking, I found the code was indeed originally purchased by Avery Dennison. This agrees with the earlier information I reported (para 52 above).

59. Mr. Peretz then suggested continuing my search by going to an additional, different website, named the "internet archive wayback machine." That site is www.web.archive.org.

60. This site reportedly tracks any change that a company makes to their websites. These changes include changes in product lines, logos, addresses, or any change in appearance or content.

61. On the site, they refer to their product as the following:

- The Internet Archive is a 501(c)(3) non-profit that was founded to build an Internet library. Its purposes include offering permanent access for researchers, historians, scholars, people with disabilities, and the general public to historical collections that exist in digital format.

62. The site was searched by the company name, "Avery Dennison." Upon doing that, I saw their website and changes made to it archived from January 19, 1998 forward (to date). Based on this information, no site existed for Avery Dennison prior to January 19, 1998 as the "waybackmachine" appears to track changes in company websites as far back as 1996.

63. The site maintains a calendar for the company (in this case Avery Dennison) showing the date of each website change. A simple comparison of that day's website information to the previously archived one shows any changes that

were made to content or appearance.

64. On Avery Dennison's website (as tracked by "waybackmachine"), there was never a mention of any product line involving notebooks, spiral notebooks, etc until the change that occurred to the Avery Dennison website on August 2, 2002. That is the first time they indicate notebooks of any kind in their product line. On the August 2, 2002 website change, Avery Dennison indicates the available product as "wirebound notebooks." No further description was available.

65. **Exhibit Q3** - I contacted Staples Headquarters, 500 Staples Drive, Framingham, Massachusetts 01702-4474, (tel 508-253-5000). I spoke and corresponded with Karen Bailey of the Office of the President. She, in turn, contacted Staples Brand Group in an attempt to obtain the answer regarding the commercial availability of the Exhibit Q3 spiral notebook.

66. By email, Ms. Bailey reported that through the request made by Staples Office of the President, their merchandising department had conducted an "extensive search." She indicated that they did not keep records "that far back;" however, their search concluded that the Exhibit Q3 spiral notebook item was listed in their (Staples) 2010 catalog but it was *NOT* listed as a product in their 2009 catalog.

67. I emailed for clarification and asked whether the implication was that "the item likely began being sold by Staples sometime between 2009 and 2010?"

68. Her response was that "Although I can't be 100% positive, I would say that this makes sense because it was not in the 2009 catalog but it did appear in the 2010 catalog."

Chemical Testing Results:

69. On January 4, 2014, I began additional physical testing along with chemical testing of the various Exhibits. The Exhibits remained in the control of opposing counsel's expert, Erich Speckin who witnessed the testing and results conducted between January 4-5, 2014 and January 8-9, 2014.

Discussion of Techniques: Thin Layer Chromatography (TLC):

70. Thin Layer Chromatography (TLC) is a widely implemented and scientifically accepted procedure used in many facets of forensic science in order to characterize chemical mixtures.

71. Chromatography, itself, was first used in 1903 to separate chlorophyll in plants. Today, TLC allows a forensic scientist to separate out different components of a chemical mixture, such as those found in writing inks, some printer inks and some toners. Once these components are separated, they can be analyzed and compared with the components of other similar chemical mixtures.

72. Inks, for instance, are typically composed of multiple colorants such as dyes and pigments, as well as solvents, resins and other trace materials.

73. In order to perform TLC analysis on ink, the ink is extracted from either sample plugs removed from the questioned Exhibit or else from the comparison library. The ink extract is then applied ("spotted"), as a tiny spot, onto a plastic or glass plate coated with a white chalk-like silica layer. Once activated, through heat, the TLC plate is then placed in a tank with a mixture of solvents. The solvent mixture begins traveling up the plate by capillary action.

74. Once the solvents meet the spotted ink, they begin traveling together. The various components within the ink move at different speeds with the solvents as

a result of different levels of attraction.

75. Those components with the least attraction move faster than the components with more solvent attraction. This results in a separation of the various extracted components of the ink, providing the examiner a view into that portion of the formula or recipe of the ink.

76. The organic dyes and some pigments will appear as bands or streaks of color on the plate. In addition, some other separated components can often be viewed using alternative viewing methods, e.g. ultraviolet radiation.

77. The separated components can then be compared with the separated components of other ink samples, either from within the documents at hand or else from a library of standard "known" inks to determine if they match.

78. If inks contain colorant components that separate and migrate identically, the ink formulations are then said to "match" each other as per ASTM International Standard Guide E 1422-05. (See Exhibit 2)

79. Note that "match" does not necessarily imply that the two inks came from the same pen or are even the same formula as there are other chemicals in ink that are not detectable using TLC. For this reason, sometimes alternative methods are performed in order to provide additional recipe information.

80. Similarly, some printer, copier and printing inks can be compared in the same manner.

81. The results derived using TLC also provide at least two methods for a forensic examiner to determine if the date a written entry was purportedly placed is consistent with the known commercial availability of the ink.

82. One such method is to identify an ink that was not commercially available on the purported date of the document. Since manufacturers are known to change or retire old inks or introduce new ink formulations, it may be determined that an ink formulation was not in production on the purported date of a questioned document.

83. This determination is based on the completeness of the comparison library. Currently, the most complete comparison library is under the custody of the U.S. federal government and is only utilized in criminal casework. There is no known "complete" private collection of comparison standards (for use in civil casework or else criminal defense), That said, important information may still be derived from use of a comparison collection, if a match or elimination is made.

84. A second method, requires that the examiner identify unique chemical dating tags that were knowingly incorporated by three major ink manufacturers in different years.

85. Ink tagging programs have been utilized throughout the 1970s, 1980s, and early 1990s.

86. Additionally, one manufacturer began incorporating a chemical dating tag in their ballpoint pens in October of 2002. Some of the tagging components can be detected by XRay Optical Fluorescence and others by TLC.

Discussion of Technique: Gas Chromatography and Gas Chromatography/ Mass Spectrometry:

87. An additional or alternate method to TLC that can be used to provide information about document composition and potentially answer questions regarding

age, is gas chromatography (GC) or gas chromatography/mass spectrometry (GC/MS).

88. GC was invented in the early 1950's and GC/MS in the late 1950's (although mass spectrometry alone was invented in 1913 based upon an 1886 finding wherein positively charged ions were deflected by electrical or magnetic fields). *See Below*:

- Thomson, J.J., Rays of Positive Electricity and Their Application to Chemical Analysis, Logmaus, 1913.
- Kitson, F.G., et al., Gas Chromatography and Mass Spectrometry Academic Press, 1996.

89. In its most basic form, GC is a form of chromatography, similar to TLC, in that it is designed to separate organic mixtures based upon solubility and "retention time." The operation of a GC involves volatilization of an organic sample in a heated inlet port (injector), separation of the components as they travel through a specially formulated column, and detection of the individual organic components by some form of detector device.

90. The organic sample being separated is pushed through the column by an inert carrier gas, e.g. helium, thus the name "gas" chromatography. The retention time (i.e. time the organic component stayed in the column) is measured by a detector. This retention time, utilizing the specific parameters of the present analysis are used in order to identify components and to compare multiple samples.

91. Mass spectrometry (MS) is often used as a detector device. It doesn't use retention time. Instead, an MS detector essentially separates ions by the

interaction of electrical or magnetic fields on the charged separated particles. The MS provides a measure of the abundance of each ionic species. Often, a comparison library is used for identification of materials. The output is in the form of an x/y plot where the x axis is the mass-to-charge (m/z) scale and the y axis is the intensity (abundance) scale.

92. GC and GC/MS systems are utilized in laboratories throughout the world. Forensically, they are used for everything from drug/poison analysis, urine analysis, arson debris examinations (where hydrocarbons may have been used to fuel a fire), explosive debris analysis and the identification of unknown organic materials.

93. With respect to ink analysis, GC/MS can be used to compare the non-colorant organic ingredients in inks e.g. resins, and vehicles which are volatile components. When an ink is placed on a document, some of the components change or dissipate as the ink ages. Think of it as evaporation. GC/MS can be used to measure these changes.

94. Some examiners look for the presence of a chemical compound known as 2-phenoxyethanol (PE) as a means of determining if a ballpoint pen ink has been present on a piece of paper for a short period of time or else more than 1-2 years.

95. It has been shown that PE evaporates very quickly when a ballpoint pen ink is first placed on paper and then eventually slows, but continues to evaporate for up to 24 months after the ink has been placed on the document. Based on the forensic technique employed, after 24 months, PE no longer evaporates at a significant or measurable rate.

96. Based on reported research by forensic laboratories, comparisons with

known aged samples, and validation studies, a recordable decrease in the level of PE by more than 25% after the questioned sample is heated indicates that the ink is less than two (2) years old, i.e. been physically on the document for less than 2 years.

97. Some inks are known to be fast aging where they dry at an extremely fast rate within the first 2 weeks from the time the ink is placed on paper.

98. In a study in 2008, a group from Germany reportedly tested 60 ballpoint writing inks and they concluded that 22 (37%) "aged out" within two weeks and the levels of PE remained relatively constant for the next 20 months. Therefore, if an ink loses less than 25% of PE after heating at 70°C, then it is not an indication that the ink is older than 2 years, but instead, the ink may be a fast aging ink, therefore, no conclusion should typically be reached based upon this result.

Discussion of Technique: Detection of 2-Phenoxyethanol and its meaning:

99. The 2-phenoxyethanol (aka phenoxyethanol or PE) test itself is a source of much controversy among peers.

100. In 1985, I published a preliminary study of volatile ink components and their use when determining how long ballpoint pen ink had actually been on a piece of paper (Stewart, L.F., "Ballpoint Ink Age Determination by Volatile Component Comparison-A Preliminary Study." J. Forensic Science, 1985; 30:405-411). This was the first study of its kind and the real beginnings of the idea that if we could accurately measure volatile components in ink we could possibly determine how long the ink had been on a piece of paper.

101. Gas chromatography (GC) was the technique used and with some inks, I noted changes detectable for up to one and a half years after the ink was placed on

paper. Specifically noted as a volatile or vehicle solvent, was phenoxyethanol (PE).

102. Research has shown that PE is found in numerous formulations of ballpoint pen inks as a vehicle solvent. This solvent has been shown to diminish with time giving us a way to opine regarding how long a particular ink may have been placed on a piece of paper.

103. One disadvantage of the approach that I developed in 1985 was that it used ratios of multiple components so it required at least two volatile components within the ink.

104. Nine years later, Aginsky was the first to modify the approach to a method that allowed analysis when only one volatile component was present (Aginsky, V.N., "Determination of the Age of Ballpoint Pen Ink by Gas and Densitometric Thin-Layer Chromatography," J Chromatography, A, 1994; 678: 119-125). Aginsky began using PE as the volatile component he would seek within an ink's composition in order to determine its age.

105. Before looking for the PE, Aginsky would identify the ink by comparing its' formula against a library of known standards (Aginsky, V.N., "Some New Ideas for Dating Ballpoint Inks - A Feasibility Study," J. Forensic Science, 1993; 38: 1134-1150).

106. This approach required a substantial amount of ink and thusly caused more damage than would be typically desirable.

107. In 1996, I warned "the need to routinely determine the age of a document appears to have been a driving force in development of new ink analysis techniques. This could be dangerous, in that the field may be driven to advance faster

than the stage of development of some of the techniques should allow." ("Distinguishing Between Relative Ink Age Determination and the Accelerated Aging Technique," Stewart, L.F. and Fortunato, S.L., International Journal of Forensic Document Examiners, January/March, 1996).

108. In 2004, Laporte, et al. also reported about detection of PE in inks utilizing GC-MS. (LaPorte, G.M., Wilson, J.D., Cantu, A.A., et al., "The Identification of 2-Phenoxyethanol in Ballpoint Inks Using Gas Chromatography/Mass Spectrometry-Relevance to Ink Dating," J. Forensic Science, Jan. 2004, Vol. 49, No. 1).

109. In that article, LaPorte reports that there are known contamination sources for PE to include "perfumes." He concludes that future researchers should be able to concentrate "their efforts on the development and implementation of a generally accepted procedure for a dynamic approach to ink dating." In addition to what LaPorte reported, there are other sources of contamination that contain PE, to include insecticides.

110. Historically, I have remained quite critical to some of the approaches for the detection of and meaning behind the presence of 2-phenoxyethanol.

111. In 2007, the Canadian team of Brazeau and Gaudreau developed a new approach that would avoid damaging the document, as no sample would be removed. (Brazeau, L. and Gaudreau, M., "Ballpoint Pen Inks: The Quantitative Analysis of Ink Solvents on Paper by Solid-Phase Microextraction," J. Forensic Science, 2007; 52: 209-215). This work represented the use of Gas Chromatography-Mass Spectrometry (GC-MS) and targeted three different volatile components; PE, benzyl

alcohol and 1-methyl-2-pyrrolidineone. Through their work, they reported being able to detect ink solvents up to 2 years after the ink was placed on the paper.

112. In 2009, Weyermann, et al. noted that the concept and use of artificial aging techniques for the dating of ballpoint pen inks is "a very difficult and controversial topic." (Weyermann, C., Williams, M., and Margot, P., Commentary on Berger-Karin, et al. "Comparison of Natural and Artificial Aging of Ballpoint Inks," JFS, 2008). They concluded by emphasizing that "forensic scientists should not attempt to examine actual criminal or civil cases until they (the methods to include unvalidated PE methods have been tested."

113. In 2010, Giebink and Speckin discussed the use of GC-MS to analyze the PE and described the techniques' limitations and pitfalls. (Giebink, P.J., Speckin, E.J. and Harner, J., "The Dating of Writing Inks Through 2-Phenoxyethanol Using Gas Chromatography-Mass Spectrometry, Advantages, Interpretation, and Limitations," AFDE, 2010). In that article, the writers determined that detection of 1.6 parts per million (ppm) or more of PE in a ballpoint ink indicates that the ink is not completely dry. This detection level is limited to use of their procedure, solvents and equipment and is not universal for other labs. The writers indicated that the samples should be run in "*triplicate*" in order to take into account possible errors, anomalies in the testing process, and for a better confidence in the results. They continue, "... no conclusions should be drawn based on a single test run for a sample as to its age." Some examiners have not taken heed to this important warning.

114. In the most recently reported study, Weyermann, et al. discusses the currently utilized approaches for ink dating. (Weyermann, C., Almog, J., Bugler, J.,

and Cantu, A. A., "Minimum Requirements for Application of Ink Dating Methods Based on Solvent Analysis in Casework," Forensic Science International, March 2011). When discussing the ink dating methods, they state, "…several questions arose over the last few years among questioned document examiners regarding the transparency and reproducibility of the proposed techniques."

115. Other important quotes from this most recent article include:

- "... ink aging pathways and rates are significantly influenced by a number of factors that may slow down or accelerate the phenomenon."
- "These parameters must therefore be extensively studied before a conclusion can be drawn on the absolute age of an ink entry."
- "The influence of substrate structure (paper type) on the drying process should not be underestimated..." and
- "In fact, to the present date, no two laboratories that do ink dating via solvent analysis use the same method,..."

116. It should be noted, the U.S. Secret Service (USSS) did not allow the use of the PE testing method in casework during the period that I was the Laboratory Director and Chief Forensic Scientist (pre-2005).

117. During that time, I was also the National Expert (the only one at the agency) on matters concerning the forensic analysis of ink. The USSS produced and abided by Standard Operating Procedures (SOP) for the various areas of forensic analysis to include "ink."

118. There, examiners were allowed to perform research on new techniques, e.g. various PE testing procedures, however new techniques were not allowed to be

used in casework until authorized by the Laboratory Director. The only issue typically preventing that authorization was any proven unreliability of a specific method.

119. Even as recently as October 8, 2009 (the last edition that I possess) the Standard Operating Procedures for Ink Analysis at the U.S. Secret Service clearly state that "Before 'new' approaches are authorized for use in USSS casework, appropriate reliability and validity studies must be conducted, with the results reviewed by the Laboratory Director."

120. "Brunelle and Cantu underlined earlier the ethical responsibilities of forensic scientists performing ink dating examinations by stating that 'Testimony involving ink dating that does not clearly state the significance of results obtained and the limitations of what can be concluded from the results of examination would be unethical according to AAFS (American Academy of Forensic Sciences) guidelines because it would be misleading.'" (Brunelle, R.L. and Cantu, A.A., Training Requirements and Ethical Responsibilities of Forensic Scientists Performing Ink Dating Examinations, Journal of Forensic Sciences, vol. 32 (6) (1987) pgs. 1502–1508).

121. To my knowledge, there is no proficiency test for ink age determination available from any recognized group that has tested the reliability and accuracy of ink age determination techniques. This is in part due to the fact that very few forensic cases arise where examiners are requested to perform such tests and as such very few agencies incorporate the tests as routine procedures. Although there are two ASTM forensic standards for the analysis of writing inks, there is none specifically

for ink age determination (ASTM Standard Guide for Test Methods for Forensic Writing Ink Comparison, E1422-05 (See Exhibit 2) and ASTM Standard Guide for Writing Ink Identification, E 1789-04 (See Exhibit 3)).

122. The lack of resources necessitates due diligence on the part of the forensic examiner in order to feel confident that results obtained from this type of ink age testing are accurate and reproducible.

123. Historically, some examiners have used poor chemistry techniques for the detection of PE in inks and to shroud that problem they have attempted to prescribe a level of reliability to their technique by discussing the reliability of the instrument being used, i.e. GC/MS. Although, forensic scientists agree that the GC/MS instrument is reliable, any procedure utilizing the equipment along with poor chemistry practices has been what in the past, I have vocally tried to refute.

Daubert Standard:

124. To meet the Daubert standard, a proposed expert's testimony must pass through two separate tests or gates.

125. The first deals with whether the underlying methodology is scientifically reliable.

126. The second requires the Court to determine whether the expert is qualified to provide an opinion based on that methodology, and even more critically, that the proposed expert testimony applies the methodology to the particular facts of the case on trial in a scientifically reliable manner.

127. There are reported decisions excluding, for failure to satisfy Daubert standards, expert opinions purporting to date ballpoint ink writing, using various

techniques and in various circumstances. EEOC v. Ethan Allen, Inc., 259 F. Supp. 2d 625 (N.D. Ohio 2003); Learning Curve Toys, L.P. v. PlayWood Toys, Inc., 2000 U.S. Dist. LEXIS 5135 (N.D. Ill. 2000).

128. In the latter case, the court applied Daubert to the ink dating technique proffered in that case as follows:

129. To determine whether expert testimony can be properly admitted as an expert conclusion, a court considers whether the conclusion

- can be tested;
- is based on methodology subject to peer review and publication;
- has been evaluated in light of a known or potential rate of error and
- has achieved general acceptance in the relevant scientific community.

(Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 593-94, 125 L. Ed. 2d 469, 113 S. Ct. 2786 (1993)).

130. In the past, I have reported that the scientific literature includes substantial evidence that some of the specific dating methods, based on the rate of evaporation of 2-phenoxyethanol, fail to satisfy all four Daubert criteria cited in Learning Curve Toys and Monteiro.

131. In some cases, in my opinion, there has been no scientific evidence that the supposed rate of evaporation of a solvent component of ink (PE) that was placed on paper is independently and exclusively attributable to the passage of determinable periods of time to the exclusion of other factors and variables including, but not

limited to:

- the characteristics of the paper(s) on which the ink is placed;
- the storage and environmental conditions to which the ink on paper was subjected prior to the extraction of the sample being tested;
- variations in the composition of the ink; and
- the thickness and amount of ink, including its solvent component that was placed on the paper before evaporation commences.

132. Furthermore, in my opinion, the scientific literature indicates that the methods and techniques relied upon by some examiners have not been subjected to independent testing with the results of that independent testing published in the peer-reviewed literature.

Discussion:

133. In an effort to abide by what I believe is the underlying meaning of the Daubert standard and to address the shortcomings of the currently available variations of the PE technique as well as approaches used by some other individuals, I provide the known limitations of the technique for the Court to review.

134. In addition, I have performed independent tests on inks of known origins that are freshly placed on paper as well as the same inks that I have placed on paper at specific times, and then allowed them to age under typical office conditions.

135. This coupled with testing of the samples after heating provides me with the best understanding of how subtle variations in ink amounts, and operating techniques can affect the results.

136. In this case, paper effects on the ink were minimized because I only

tested a specific ink entry, that is, I tested one particular ink from one general location on the same page. That step minimizes the effect of paper because clearly the same paper was used in all of the tested sample and any heat or cold effect, based on storage conditions, which may have affected the rate of ink aging would have affected the page tested, consistently. As noted during the UV fluorescence examination, no indication was found to suggest the pages in the notebooks were artificially aged.

137. Mr. Randy Brown reportedly testified in his deposition that the questioned documents had been stored on a shelf, in a cabinet or in a box in his home office in Woodland Hills, California. There was no report of the documents coming into contact with any material that may influence the testing for PE, e.g. skin creams, cosmetics, etc. Likewise, there was no indication that the documents were stored in a condition that would slow down their natural aging process.

138. Secondly, I utilized a substantial sample size (10 microplugs of ink at 0.75mm each) as opposed to one to three microplugs as some other examiners utilize. It is my opinion that the use of less sample size can greatly affect the error rate and can induce erroneous conclusions.

139. Logically, if an examiner used one plug and the amount of ballpoint ink deposited (through thickness or else volume per area) on it was smaller than a second, comparison plug, the comparison of the two results could be substantially different, even if the two plugs were from ink of the same age.

140. Third, I performed my testing in *triplicate*. Some other examiners only perform one test on 1-3 microplugs before reaching conclusions. By performing the

tests in triplicate (three separate samplings, 10 microplugs each, from the same area of the document), I accomplish many things. Any variation caused by human error, sample concentration or equipment/instrument error would be easily identifiable and thusly minimized.

141. My three results are averaged to provide a more reproducible answer, one that should be less affected by differences in quantity or human or instrument error.

142. Although, I was the first to record the use of GC to examine the volatile components in ballpoint inks (1985), I have been vocally opposed to some of the methods and approaches used since then. During the last year, I have moved to address many of those concerns by applying a solid basis for any opinion reached while addressing as many of the possible shortcomings, as possible. This coupled with still acknowledging the limitations of the technique, in my opinion, is the best way to move forward.

143. In this case, I have carefully limited the potential error by applying solid scientific reasoning and chemistry practices. I have done this given the time and examination constraints placed upon me, before providing my test results.

Results of Forensic Testing:

144. Exhibit Q2 contains 68 of the original 100 pages. Hence, 32 pages have been torn out and removed. Exhibit Q3 contains 92 of the original 120 pages. Hence 28 pages have been torn out and removed.

145. The writing inks and toner in this case were first physically examined in order to determine the types and colors of inks and their various locations within the

Exhibits. Various ballpoint and non-ballpoint writing inks and highlighter inks (Exhibits Q1-Q3) as well as the office machine toner (Exhibit Q4) were examined.

146. Possible "Tagged" inks were also noted.

147. The toner from Exhibit Q4 was analyzed and compared against my library collection of known standards.

148. The toner is consistent with that used in a 600 dpi microfine toner system.

149. Through TLC and additionally GC/MS, the toner used to create Exhibit Q4 only matched one toner from my library collection of known standards. The matching toner was I-703. This corresponds to Hewlett Packard LaserJet 35A toner which is utilized in Hewlett Packard LaserJet 1000 Series printers, e.g. the LJ P1005 and P1006.

150. The Hewlett Packard LaserJet 1000 series was the first printer available for less than $250 and it was introduced to the commercial marketplace in September of 2001. Exhibit Q4 is purportedly dated March 1998. Furthermore, the HP Laserjet 1000 series utilizes 600 dpi microfine toner.

151. I followed accepted methodologies and protocols for the toner analysis. The U.S. Secret Service utilized these same methodologies during my tenure as Laboratory Director and Chief Forensic Scientist. In the article, "A Sketch of Analytical Methods for Document Dating Part 1. The Static Approach: Determining Age Independent Analytical Profiles, by Antonio A. Cantu, the author describes in Section IID Photocopier Toner, "The type of photocopier and toner used to produce a photocopied document can sometimes be determined and dated. This, as mentioned,

depends on the existence of a database of standard samples, their profiles, and their dates of introduction."

152. The toner was not found to be consistent with any other toner from my library of standards.

153. My library of standard toners was created by obtaining samples from the manufacturer or distributors, compiling them, analyzing them based on their compositions and then utilizing them for comparison against unknown samples. It includes common office printers to include Hewlett Packard printers from the mid 1980's to present, along with other lesser known office printers, to include Epson, Lexmark, Brother, Dell, and others. I have undertaken all reasonable efforts to ensure my collection of library standards is as complete as possible.

154. At least two different red ballpoint pen inks were found within the documents. The first was found in Exhibits Q1 and Q3 and the second was found in Exhibit Q2. At least one red non-ballpoint pen ink was found within the documents. This ink was found on Exhibits Q2 and Q3.

155. At least three black ballpoint pen inks were found within the documents. These inks were found within Exhibits Q2 and Q3. Numerous black non-ballpoint pen inks were found within the documents. These inks were found on Exhibits Q2 and Q3.

156. At least two blue ballpoint pen inks were found within the documents. These inks were found within Exhibits Q2 and Q3. Numerous blue non-ballpoint pen inks were found within the documents. These inks were found on Exhibits Q2 and Q3.

157. At least two yellow highlighter inks were found within the documents. These inks were found on Exhibits Q1, Q2 and/or Q3.

158. Note: There may be additional ballpoint pen inks that were not identified within the Exhibits. Likewise, determination of the number of non-ballpoint pen inks and their locations was not completed. This is due to the limitations placed on my examination time.

159. Possible tags were noted in some of the inks. These were not confirmed due to time constraints.

160. Next, the ballpoint pen inks were analyzed for the presence or absence of the chemical compound known as 2-phenoxyethanol (PE). The general procedure utilizing my particular equipment follows:

Equipment:

- Hewlett Packard 5890/5972 System
- Hewlett Packard - 5890 Gas Chromatograph
- Hewlett Packard - Split/Splitless Injection Port with Manual Pneumatics
- Hewlett Packard - 5972 Mass Selective Detector
- Hewlett Packard - 82350 Communication Card
- Rough Pump
- Intel Computer(2.6Ghz,2GB RAM,160GB HD,DVDCDRW)
- Windows 2000 operating system
- Agilent G1701BA Chemstation Software including NIST 75K Library
- 20" Flat Screen Monitor, Keyboard and Mouse

- Ultra High Purity Helium carrier gas
- Chromatography grade Methanol or Chloroform
- Column: 60 meter X .32 mm fused silica, CP-Select 624
- MSD is operated in electron ionization mode (EI) scanning a mass range of 40-350 m/z after an initial filament delay of 10 mins.
- Autotune and run solvent blanks to ensure system is operating properly.

For Ink Samples:

- Place the appropriate number of ink plugs into a conical vial.
- 10 microliter MeOH or ChCl3 extraction for 10 minutes.
- Draw 1 microliter and manually inject.
- Split ratio 3:1.
- 245 degrees C injection port temp w/ He @ 1 ml/min constant flow rate.
- 5 min hold @ 100 degrees C.
- Ramp @ 15 degrees C/min to 220 degrees C.
- Final hold at 220 degrees C for 8 min.
- 21 min total

Evaluation of Results:

- Look for the presence of 2-Phenoxyethanol (PE).
- If 10,000 counts or more are detected then heat a sample and repeat.
- If less than 10,000 counts, then insufficient PE for evaluation.

161. Each area of the questioned documents that contained ballpoint pen ink entries were tested for the presence or absence of PE. Although levels of PE were

detected in many of the tested inks, time constraints did not allow testing of all of the inks in *triplicate* in order to determine if the results behaved consistently.

162. In the case of three of the ballpoint pen inks, I was able to run triplicate samplings and analyses. In each of the three cases, the results indicate a quantity of PE present consistent with the inks being on the documents for no more than 2 years.

163. In two of the cases, there was sufficient time in order to run a "heated" sample of the ink as well to show that the level of PE greatly diminished with heat. This is indicative of those inks still in the "aging" process and another indicator they have been on the pages for no more than two years. There was insufficient time in order to test a "heated" sample of the third ink.

164. The samples tested that indicated they had been on the paper for no more than two years are the black ballpoint pen inks found on Q2 page 16 and Q3 page 16 and the blue ballpoint pen ink found on Q3 page 11. Note: "Heated" samples were tested for Q2 page 16 and Q3 page 11 with consistent results. Insufficient time was provided to test the "heated" sample of Q3 page 16, so additional work is warranted.

165. Further, it should be noted that unless further testing is authorized, we cannot be certain as to how widespread throughout the notebooks these three inks exist and whether any of the other inks (not yet tested in *triplicate*), also indicate more recent placement, contradicting their purported dates of creation.

166. The average PE abundance reading for the *triplicate* ink samplings follows:

- Q2 page 16 Abundance average = 24,333 (unheated)

Abundance (heated) = 3,000

88% drop between unheated and heated sample (This is significantly a higher percentage than the 25% required (See para 96 above)).

- Q3 page 11 Abundance average = 33,333 (unheated)

Abundance (heated) = 4,500

86% drop between unheated and heated sample (This is significantly a higher percentage than the 25% required (See para 96 above)).

- Q3 page 16 Abundance average = 24,333 (unheated)

Abundance (heated) = unknown due to time constraints.

Although, for the Exhibit Q3 page 16 sample, a heated sample was not tested, the Abundance average of the triplicate samples (24,333) was well over the minimum threshold of 10,000 units (typically the minimum threshold for an examiner to reach a conclusion regarding a significant level of PE).

167. Only some formulations of ballpoint pen ink contain PE when freshly made. The presence of significant amounts (higher than a 10,000 abundance unit threshold) in even one ink within a dated document or document group can show the entire document/group is suspect and/or falsely dated. In this case, we have at least three inks indicating significant amounts of PE.

168. Even though, I have been vocally opposed to certain procedural deficiencies used by some examiners when testing for PE in ballpoint pen inks, my own research as well as research by others indicates the procedure can work if proper chemistry and processes are employed. I have tried to utilize all measures reasonable here in order to ensure accuracy.

169. That said, it is probable that ink found within the Exhibit Q2 and Q3 spiral notebooks was not placed in those books during 1997-1998, but instead within the last two years.

170. Separately from the PE testing of the inks, there are numerous other strong indicators that the document collection is falsely dated.

171. It is probable that the toner used to create the Q4 book is toner from an office machine system that did not exist in March 1998 (creation date as indicated on the document), but instead was not first commercially available until September 2001.

172. These results coupled with manufacturer information about the commercial availability of the two spiral notebooks (UPC barcodes), yield a highly probable conclusion that the Exhibit Q1 through Q4 document collection was not produced in 1997-1998, but instead much more recently.

Further Suggested Work:

173. Discussion: I was greatly limited in the scope of my testing as well as in the time I was allowed to examine the documents. The protocol provided by the Defendants' counsel directed that the testing be performed in the presence of Defendant's expert. That restriction would have been a non-issue if the Defendant's expert had been allowed to remain for the amount of time I was originally instructed was authorized. Instead, Defendant's expert left (at the apparent direction of Defendant's counsel) the testing at least one full day prior to the original scheduled completion date. Given the restrictions, I performed the most logical tests in order to address whether the documents were falsely dated. To complete the process and

provide the most complete forensic result to the Court, additional work is suggested.

174. All of the inks should be tested so as to be certain of how widespread and where each ink is located within the Exhibits.

175. The inks that are ballpoint pen inks should all be tested for the presence of the solvent, PE. Note: Based on their composition, non-ballpoint pen inks are not forensically tested for the presence of PE.

176. If amounts are found indicating sufficient quantities of PE, then tests should be conducted in triplicate, from entries on the same page, as well as samples should be tested after heating to ensure the ink is still in the process of having the PE demonstrably diminish with time (i.e. aging).

177. As a means of fairness, I would hope that a qualified forensic expert from the Plaintiffs be allowed to (equally) watch the testing condcted by defendant's expert, Erich Speckin. Defendants received disclosure of forensic document tests conducted by Plaintiffs as well as the ability to view results as they were obtained. Assuming, Defendants choose to perform an independent testing of the Exhibits in this case, having Plaintiff's expert watch those tests would certainly prove the fairest approach.

178. In addition, I believe it would be helpful to have the custodians of company records at both Avery Dennison and Staples Headquarters, as well as the Internet Archive subpoenaed to provide any additional records supportive of the commercial history of the two spiral notebooks (Exhibits Q2 and Q3).

179. I am able and ready to perform the additional and remaining tests if given the opportunity.

///

I declare under penalty of perjury under the laws of the State of California and the United States that the foregoing is true and correct. Executed this 24th day of January in San Luis Obispo, California.

DATED: Jan 24, 2014

LARRY F. STEWART

PROOF OF SERVICE

I am over the age of 18 years and not a party to this action. My business address is: Law Offices of Gerard Fox, Inc., 1880 Century Park East, Suite 600, Los Angeles, CA 90067.

On February 4, 2014, I served the following documents entitled:

DECLARATION OF LARRY F. STEWART IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

on the person(s) listed in the attached Service List. The documents were served by the following means:

☐	**OFFICE MAIL:** By placing in sealed envelope(s), which I placed for collection and mailing today following ordinary business practices. I am readily familiar with this agency's practice for collections and processing of correspondence for mailing; such correspondence would be deposited with the U.S. Postal Service on the same day in the ordinary course of business.
☐	**PERSONAL DEPOSIT IN MAIL:** By placing in sealed envelope(s), which I personally deposited with the U.S. Postal Service. Each such envelope was deposited with the U.S. Postal Service at Los Angeles, California, with first class postage thereon fully prepaid.
☐	**EXPRESS U.S. MAIL:** Each such envelope was deposited in a facility regularly maintained at the U.S. Postal Service for receipt of Express Mail at Los Angeles, California, with Express Mail postage paid.
☐	**HAND DELIVERY:** I caused to be hand delivered each such envelope to the office of the addressee as stated on the attached service list.
☐	**FEDERAL EXPRESS:** By placing in sealed envelope(s) designated by Federal Express with delivery fees paid or provided for, which I deposited in a facility regularly maintained by Federal Express of delivered to a Federal Express courier, at Los Angeles, California.
☐	**ELECTRONIC MAIL:** By transmitting the document by electronic mail to the electronic mail address as stated on the attached service list.
☐	**FAX:** By transmitting the document by facsimile transmission. The transmission was reported as complete and without error.
☒	**By CM/ECF Electronic Service:** I caused such document to be served via the Court's (NEF) electronic filing system on all registered parties.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on February 4, 2014

Cindy Hamilton

Service List

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